REMARKS

Claims 1 to 6 have been examined and are pending. Claims 1 to 6 have been cosmetically amended to correct informalities and to place them in conformity with US claiming style. No new matter has been added.

Claim Rejections – 35 USC §101

Claims 1 to 6 have been rejected under 35 USC §101 as claiming the same invention as that of claims 1 to 13 of Kikuchi et al. Applicants respectfully disagree for the following reasons.

Claim 1 of the present application as amended recites:

1. (Amended) A semiconductor device comprising:
a semiconductor substrate of a first conductive type;
a gate insulation film disposed over the semiconductor substrate;
a gate electrode provided on the gate insulation film;
a high concentration source region of a second conductive type disposed in the semiconductor substrate and at one end of said gate electrode;
a low concentration drain region of the second conductive type disposed in the semiconductor substrate and provided to face said source region through a channel region;
a high concentration drain region of the second conductive type spaced away from another end of said gate electrode and disposed in said low concentration drain region; and
a middle concentration layer of the second conductive type disposed in said low concentration drain region and disposed at least from a predetermined position spaced away from said gate electrode to said high concentration drain region,
wherein an impurity concentration of said middle concentration layer increases from near the gate electrode to near said high concentration drain region.

Claim 1 of Kikuchi et al. ("'258 Application") (Application Serial No. 09/829,258; 104517-075001; F51-132534M/TOM)

recites:

1. (Amended) A semiconductor device comprising:
a gate electrode formed on one conductive type semiconductor substrate through a gate insulation film;
a high concentration reverse conductive type source region of adjacent to one end of said gate electrode;
a low concentration reverse conductive type drain region formed facing said source region through a channel region;

a high concentration reverse conductive type drain region separated from the other end of said gate electrode and included in said low concentration reverse conductive type drain region; and

a middle concentration reverse conductive type layer having **high impurity concentration peak at a position of the predetermined depth in said substrate at a region spanning at least from the position having the predetermined space from said gate electrode to said high concentration reverse conductive type drain region, and formed so that high impurity concentration becomes low at a region near surface of the substrate.**

The bolded feature of claim 1 of the present application is not claimed in the bolded feature of claim 1 of '258 Application. That is, in claim1 of the present application, the impurity concentration of the middle concentration layer is claimed to increase from near the gate electrode to near the high concentration drain region. In claim 1 of '258 Application, the impurity concentration of the middle concentration layer is claimed to peak at a certain depth and decrease towards the surface of the substrate. Thus, the same invention is not claimed in the two different applications. However, because the claims of the two applications are similar, if necessary, we can file a terminal disclaimer.

With regarding to the allegation that claims 3 and 6 are substantially duplicates of each other, Applicants submit that they are not for the following reason: Claim 3 claims a feature of the impurity concentration. Claim 6 is directed to a feature of the middle concentration layer. Thus, they are not duplicates of each other. Claims have been amended to clearly bring out this difference.

Applicant asks that all claims be allowed. Enclosed is a heck for the Petition for Extension of Time fee (one-month). Please apply any other charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

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Version with markings to show changes made

In the specification:

Title beginning at page 1, line 1 has been amended as follows:

SEMICONDUCTOR DEVICE FOR IMPROVING SUSTAINING VOLTAGE

In the claims:

Claims 1 to 6 have been amended as follows:

1. (Amended) A semiconductor device comprising:

a semiconductor substrate of a first conductive type;

a gate insulation film disposed over the semiconductor substrate;

a gate electrode [formed on one conductive type semiconductor substrate through a] provided on the gate insulation film;

a high concentration [reverse conductive type] source region of a second conductive type [adjacent to] disposed in the semiconductor substrate and at one end of said gate electrode;

a low concentration [reverse conductive type] drain region of the second conductive type disposed in the semiconductor substrate and [formed facing] provided to face said source region through a channel region;

a high concentration [reverse conductive type] drain region of the second conductive type [separated] spaced away from [the other] another end of said gate electrode and [included] disposed in said low concentration [reverse conductive type] drain region; and

a middle concentration [reverse conductive type] layer of the second conductive type disposed in said low concentration drain region and disposed [at a region spanning] at least from [the] a predetermined position [having the predetermined space] spaced away from said gate electrode to said high concentration [reverse conductive type] drain region, [and]

wherein [formed so that high] an impurity concentration of said middle concentration layer [becomes lower at a region] increases from near the gate electrode [than] to near said high concentration [reverse conductive type] drain region.

2. (Amended) A semiconductor [devise] device according to claim 1, wherein said middle concentration [reverse conductive type] layer is formed [at a region spanning at least from said gate electrode to said high concentration reverse conductive type drain region] so that the impurity concentration gradually [becomes high] increases from said gate electrode to said high concentration [reverse conductive type] drain region.

3. (Amended) A semiconductor [divide] device according to claim 1, wherein said middle concentration [reverse conductive type] layer is formed [at a region spanning at least from said gate electrode to said high concentration reverse conductive type drain region] so that the impurity concentration [becomes high] increases step by step from said gate electrode to said high concentration [reverse conductive type] drain region.

4. (Amended) A semiconductor device according to claim 1, wherein said high concentration [reverse conductive type] source region is formed in said low concentration [reverse conductive type drain] source region.

5. (Amended) A semiconductor device according to Claim [1] 4,

wherein said middle concentration [reverse conductive type] layer is formed at an entire region spanning from said gate electrode to said high concentration [reverse conductive type] drain region.

6. (Amended) A semiconductor device according to Claim 1,

wherein said middle concentration [reverse conductive type] layer is formed at an entire region spanning from said gate electrode to said high concentration [reverse conductive type] source·drain region.